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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,109	02/20/2004	Seth A. Lieffort	59608US002 (1004-103US01)	6913
32692	7590	08/11/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			NGUYEN, TUAN HOANG	
			ART UNIT	PAPER NUMBER
			2618	

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/784,109	<b>Applicant(s)</b> LIEFFORT ET AL.	
	<b>Examiner</b> Tuan H. Nguyen	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 5/3/2004, 6/13/2005, 11/4/2005, and 3/10/2006 has been considered by Examiner and made of record in the application file.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-6, 9-12, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunz (US PAT. 6,127,989).

Consider claim 1, Kunz teaches a radio frequency identification (RFID) system comprising: an antenna (item 104) that forms an electromagnetic field for communication with RFID tags, wherein the antenna has a substantially planar form (see fig. 2 col. 2 lines 9-13); and a substantially-contiguous conductive shield (item 20)

positioned around the antenna and within a plane parallel to the antenna (see fig. 2 col. 2 lines 14-20).

Consider claim 3, kunz further teaches the conductive shield comprises planar conductive regions oriented to form a non-shielded inner region, and further wherein the antenna is disposed within the non-shielded inner region and parallel to the planar conductive regions (see fig. 2 col. 2 lines 9-20).

Consider claim 4, kunz further teaches the conductive regions define at least one disconnect area that prevents the conductive shield from forming a closed conductive loop around the antenna (col. 1 lines 28-34).

Consider claim 5, kunz further teaches the antenna comprises one or more conductive loops including an outer loop, and the conductive regions of the conductive shield are located at least a distance D from an outer loop of the antenna that is selected based on a radius of the outer loop (see fig. 2 col. 1 lines 49-57).

Consider claim 6, kunz further teaches the antenna has a first conductive loop having a radius D1 and a concentric second conductive loop having a radius D2, and the conductive regions of the conductive shield are located at least a distance D3 from the outer loop, and wherein D3 is selected as approximately the average of D1 and D2 (see fig. 2 col. 2 lines 9-13).

Consider claim 9, kunz further teaches the antenna and the conductive shield are mounted to a working surface of an RFID check-in/check-out area (see fig. 2 col. 2 lines 1-3).

Consider claim 10, kunz further teaches the working surface has a recessed area and a non-recessed area, and further wherein the antenna is mounted to the recessed area of the working surface and the conductive shield is mounted to the non-recessed area (see fig. 2 col. 2 lines 1-3).

Consider claim 11, kunz further teaches the conductive shield and the antenna are co-planar (see fig. 2 col. 2 lines 14-20).

Consider claim 12, kunz further teaches the conductive shield and the antenna are located in two different parallel planes (see fig. 2 col. 2 lines 14-20).

Consider claim 14, kunz further teaches the antenna comprises a plurality of conductive loops to produce the electromagnetic field, and wherein the conductive loops are spaced apart at least a distance  $D$  that is selected based on a dimension of the RFID tags with which the antenna communicates (see fig. 2 col. 2 lines 14-20).

Consider claim 15, kunz further teaches the distance D is selected to exceed a maximum dimension of the RFID tags (see fig. 2 col. 2 lines 14-20).

Consider claim 16, kunz further teaches the RFID tags have a dimension of length M, and the distance D between each of the plurality of conductive loops is selected such that  $D \geq M$  (see fig. 2 col. 2 lines 14-20).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunz (US PAT. 6,127,989) in view of Mejia et al. (U.S PAT. 6,700,547 hereinafter, "Mejia").

Consider claim 2, Kunz teaches a radio frequency identification (RFID) system.

Kunz does not explicitly show that the conductive shield shapes the electromagnetic field to extend substantially in a direction perpendicular to the antenna, and prevents the electromagnetic field from forming substantially over the conductive shield.

In the same field of endeavor, Mejia teaches the conductive shield shapes the electromagnetic field to extend substantially in a direction perpendicular to the antenna, and prevents the electromagnetic field from forming substantially over the conductive shield (col. 6 lines 50-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, the conductive shield shapes the electromagnetic field to extend substantially in a direction perpendicular to the antenna, and prevents the electromagnetic field from forming substantially over the conductive shield, as taught by Mejia, in order to provide an antenna capable of detecting a transponder irrespective of the orientation of the transponder passing through the electromagnetic fields generated by the antenna.

Consider claim 13, Mejia further teaches an RFID interrogation device coupled to the antenna, wherein the interrogation device interrogates the RFID tags to obtain information Consider associated articles; and a computing device to process the information retrieved from the RFID interrogation device (col. 5 line 15-22).

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunz (US PAT. 6,127,989) in view of Lee (U.S PAT. 6,307,517).

Consider claim 7, Kunz teaches a radio frequency identification (RFID) system.

Kunz does not explicitly show that each of the conductive regions have respective widths extending outward from the antenna, and further wherein the widths

are selected based at least in part on a threshold level of the magnetic field necessary for RFID communication between the antenna and the RFID tags.

In the same field of endeavor, Lee teaches each of the conductive regions have respective widths extending outward from the antenna, and further wherein the widths are selected based at least in part on a threshold level of the magnetic field necessary for RFID communication between the antenna and the RFID tags (col. 4 lines 47-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, each of the conductive regions have respective widths extending outward from the antenna, and further wherein the widths are selected based at least in part on a threshold level of the magnetic field necessary for RFID communication between the antenna and the RFID tags, as taught by Lee, in order to improve radio frequency identification (RFID) reader which operates with a low power consumption and which may tolerate a wide fluctuation in input voltages.

Consider claim 8, Lee further teaches the widths are selected to extend sufficiently in directions parallel to and outward from the antenna to prevent the electromagnetic field from forming in or above the conductive regions until the strength of the magnetic field reduces to below the communication threshold (col. 7 lines 25-34).

### ***Conclusion***

7. Any response to this action should be mailed to:



Mail Stop\_\_\_\_\_ (Explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents

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Facsimile responses should be faxed to:

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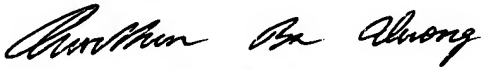
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571) 272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2618

Information Consider the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Nguyen  
Examiner  
Art Unit 2618

 8/6/06  
QUOCHIEN B. VUONG  
PRIMARY EXAMINER